

AMENDMENTS TO THE SPECIFICATION

Please amend the Specification as follows:

Please amend the paragraph beginning at page 3, line 6, as follows:

To form an article of manufacture with the flocked transfer, a hot melt or thermosetting adhesive film (in the form of a sheet or cut to shape) is positioned on the substrate to which the transfer is to be applied. The ~~hot melt~~ thermosetting film is preferably a polyester or polyurethane film, but can be any thermosetting film. The flock with the release adhesive and release sheet (i.e., the transfer) is then placed on the sheet of ~~hot melt~~ permanent adhesive film with the release sheet up, so that the flocking is in contact with the ~~hot melt~~ permanent adhesive film. Heat is then applied to the transfer. The heat melts the ~~hot melt~~ permanent adhesive film, and secures the flock to the substrate. Because the permanent adhesive film is thermosetting in one embodiment, even if it is subsequently subjected to heat, it will not remelt, nor become tacky, and hence, there is no risk of fibers becoming matted down in any of this type of adhesive, which could otherwise ruin the plush pile effect. In addition, it is likely that the use of a thermoset powder could be added to a bond print latex flock adhesive binder, to serve as a method for increasing the adhesion and again reducing the risk of any remelting, or becoming tacky, when the flock transfer is subsequently exposed to heat. It is known that there is a much stronger adhesion with thermosetting materials, because thermoset materials will cross-link with a chemical reaction and thereby adhere the flock fibers to it, which become chemically attached thereto. Through the usage of this invention, the finished flock surface is more plush, soft, because more of the fiber is exposed and extends upwardly out of the adhesive, than with the screen-printed latex, as currently used. Also, this affords better soil release during washing or cleaning because of less fiber/adhesive entanglement occurs with the flock, during application.

Please amend the paragraph beginning at page 4, line 4, as follows:

FIG. 3 is an exploded view of the transfer, ~~a hot melt~~ a permanent adhesive sheet, and a substrate used to make an article of manufacture;

Please amend the paragraph beginning at page 4, line 6, as follows:

FIG. 4 is a cross-sectional view of an article of manufacture using the transfer of the present invention, showing a part of the transfer applied to part of the substrate and a part of the transfer and ~~hot melt~~ permanent adhesive film spaced from the substrate; and[[,]]

Please amend the paragraph beginning at page 4, line 18, as follows:

A prior art flocked transfer 101 is shown in FIG. 1. As is known, such transfers include a dimensionally stable release sheet 103 to which a conventional flock transfer release adhesive 105 is applied in a pattern which corresponds to the overall image to be flocked. The flock 107 is then electrostatically coated into the release adhesive 105. A binder adhesive 109 is applied to the exposed ends of the flock to bind the flock together as a unit. Lastly, a hot melt adhesive film 111 is applied. The transfer is then allowed to dry. The transfer is applied to a substrate, as is known, by positioning the transfer on a substrate, such as a shirt or other item of clothing, with the hot melt adhesive in contact with the substrate, and applying heat to the transfer. The heat activates the hot melt adhesive to adhere the transfer to the substrate.

This process is described in my prior patent, U.S. Pat. No. 4,810,549, as well as in my co-pending application, Ser. No. 09/548,839 filed April 13, 2000, both of which are incorporated herein by reference. In U.S. Patent 4,810,549, a plush textured multicolored flock is disclosed in which differing colors of flock having a length greater than 0.3 mm are applied sequentially to a release adhesive coated base sheet through predetermined areas of masked screens. The applied flock is thereafter coated with a binder adhesive, such as a liquid water-based acrylic (40-60% water), which binds the flock into a unit. In one configuration, the binder adhesive contains an additional adhesive, such as a hot melt, for binding the transfer to a substrate. In an alternative configuration, the hot melt adhesive (which is usually a granular polyester or nylon) is formed as a separate layer. U.S. Application Serial No. 09/548,839, filed April 13, 2000, discloses a mouse pad produced by applying differently colored flock (having a length of 1 mm and 3.3 Dtex) electrostatically through a screen to a release adhesive-coated paper sheet. A binder adhesive, such as a water-based acrylic, is screen printed to the flock after contacting the release adhesive. The

binder adhesive may contain a hot melt or the hot melt may be applied to the free surface of the binder adhesive. The hot melt adhesive is bonded to a surface, such as a rubber pad, using heat and pressure. The release adhesive and paper sheet are then removed. In one process configuration, a flock-coated adhesive carrier sheet, a solid pre-formed binder adhesive film or heat seal film, and the rubber base material are thermally fused together in a drying oven.

Please amend the paragraph beginning at page 5, line 6, as follows:

A flocked transfer 1 of the present invention is shown in FIG. 2. The transfer 1 of the present invention includes a release sheet 3 to which a conventional release agent 5, such as wax, has been applied. The release agent is applied to the sheet in the shape of the pattern of the flocking. Flocking 7 is then applied to the release agent, and hence to the release sheet, to form the transfer. The flocking 7 is applied, for example, in the manner as described in my prior patent, U.S. Pat. No. 4,810,549, which is incorporated herein by reference. Unlike the prior art processes, the transfer 1 of this embodiment is made without the use of a binder adhesive or a hot melt adhesive. As is discussed below, a thermosetting film is used to adhere the transfer to a substrate.

Please amend the paragraph beginning at page 5, line 6, as follows:

An article of manufacture, such as an item of clothing having a transfer 1 applied thereto, a mouse pad, coaster, or other item having a flocked surface is easily produced using the transfer 1. The article of manufacture 11 is produced by positioning a hot melt or thermosetting permanent adhesive sheet 13 between a substrate 15 and the flocked release sheet. The ~~hot melt~~ sheet is, for example, a sheet of thermosetting polyester, available from Bostik, Inc. The ~~hot melt~~ sheet can also be made from a thermosetting polyurethane. Any other thermosetting film should also work well. The substrate can be an item of clothing, a rubber pad (for producing a mouse pad or coaster), etc. The ~~hot melt~~ sheet can be precut to correspond to the shape of the transfer 1. The transfer 1 is then positioned on the ~~hot melt~~ sheet with the flock 5 against the ~~hot melt~~ sheet 13. Heat is applied to the transfer through the release sheet to activate the ~~hot melt~~ permanent adhesive sheet. The ~~hot melt~~ sheet then acts to both bind the flock 5 together and to adhere the flock 5 to the substrate 15.

Preferably, to assemble the article, the flocked release sheet, the permanent adhesive sheet (which is preferably the thermosetting film), and the substrate are brought together and passed through a heat-laminating press where the three parts are subject to temperature of about 300°F (about 150°C) and pressure (about 40-50 psi) for about 30 seconds. It has been found that a medium-to-firm pressure has been most advantageous in providing for assembly of this type of plush flocked transfer. The pressure and heat will cause the ~~hot-melt film~~permanent adhesive sheet to adhere to the flock and the substrate. Additionally, the ~~hot-melt~~ thermosetting film will cross-link or cure, to give a strong attachment of the flock to the substrate.

Please amend the paragraph beginning at page 6, line 10, as follows:

Articles, such as mouse pads or coaster, in which the entire top surface of the article is covered with the flocking can be produced on a continuous basis, as shown in FIG. 5. Rolls 21, 23, and 25 of a flocked release sheet 1, the ~~hot-melt film~~ permanent adhesive sheet 13, and the substrate 15 are provided. The three parts are brought together at a laminating station 33. Rollers can be provided in front of the station 33 so that the three elements are adjacent each other as they enter the laminating station. In the laminating station, heat and pressure are applied to the three sheets (the flocked release sheet, the ~~hot-melt film~~permanent adhesive sheet, and the substrate) to melt the ~~hot-melt film~~permanent adhesive sheet. The melted ~~hot-melt film~~permanent adhesive sheet will then cure or cross-link, as noted above, to adhere the flock to the substrate. A web 35 exits the laminating station. The web 35 is then allowed to cool. The web 35 is ultimately directed to a cutting station where it is cut into individual articles. Once the web 35 is cooled, it can be directed immediately to a cutting station (after the sheet 35 cools), or can it can be wound up on an uptake roller to be cut into individual articles at a later time, or at a different location. At the cutting station, the release sheet is removed from the flock and gathered on an uptake roll or is otherwise disposed of. After the release sheet has been removed from the flock, the substrate with the flock adhered thereto is cut to form the articles 11. It is also likely that one could remove the release liner either before or after the die cutting procedure.

Please amend the paragraph beginning at page 7, line 5, as follows:

To produce flocked articles, such as shirts, jackets, etc., which cannot be easily flocked on a continuous basis, the ~~hot-melt~~permanent adhesive sheet can be applied to the transfer 1 prior to applying the transfer to the substrate. To do this, the thermosetting ~~hot-melt~~ film is placed in contact with the flock of the transfer, and the transfer and release sheet are heated to a temperature at which the thermosetting ~~hot-melt~~ film become tacky, but below the temperature at which the thermosetting ~~hot-melt~~ film begins to cure and cross-link. This will adhere the thermosetting ~~hot-melt~~ film to the transfer 1 to form a transfer which can later be applied to an article by positioned the transfer with the ~~hot-melt~~ thermosetting film in position on the article (i.e., piece of clothing) and applying heat and pressure to the transfer, for example, with an iron, sufficient to melt the ~~hot-melt~~ thermosetting film, to cause the ~~hot-melt~~ film to cure and cross-link.